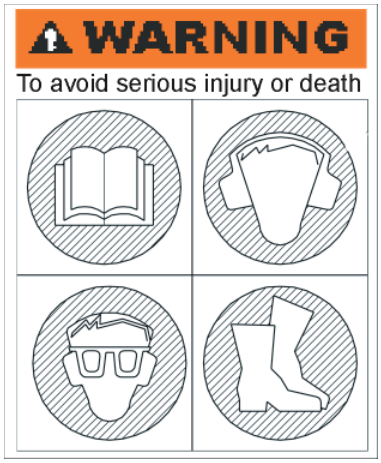
SM50
HYDRAULIC SUMP PUMP

⚠ WARNING

SERIOUS INJURY OR DEATH COULD RESULT FROM IMPROPER REPAIR OR SERVICE OF THIS TOOL.

REPAIRS AND/OR SERVICE TO THIS TOOL MUST ONLY BE DONE BY AN AUTHORIZED AND CERTIFIED DEALER.



SAFETY, OPERATION AND MAINTENANCE SERVICE MANUAL

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SERVICING THE STANLEY HYDRAULIC Sump Pump. This manual contains safety, operation, and routine maintenance instructions. Stanley Hydraulic Tools recommends that servicing of hydraulic tools, other than routine maintenance, be performed by an authorized and certified dealer. Please read the following warning.

⚠ WARNING

SERIOUS INJURY OR DEATH COULD RESULT FROM THE IMPROPER REPAIR OR SERVICE OF THIS TOOL.

REPAIRS AND / OR SERVICE TO THIS TOOL MUST ONLY BE DONE BY AN AUTHORIZED AND CERTIFIED DEALER.

For the nearest authorized and certified dealer, call Stanley Hydraulic Tools at the number listed on the back of this manual and ask for a Customer Service Representative.

CERTIFICATE OF CONFORMITY

CERTIFICATE OF CONFORMITY
ÜBEREINSTIMMUNGS-ZERTIFIKAT
CERTIFICAT DE CONFORMITE CEE
CERTIFICADO DE CONFORMIDAD
CERTIFICATO DI CONFORMITA

STANLEY®

Hydraulic Tools

I, the undersigned:
Ich, der Unterzeichnende:
Je soussigné:
El abajo firmante:
lo sottoscritto:

Winterling, David

Surname and First names/Familiennname und Vornamen/Nom et prénom/Nombre y apellido/Cognome e nome

hereby certify that the construction plant or equipment specified hereunder:
bestätige hiermit, daß das im folgenden genannten Werk oder Gerät:
certifies par ceci que l' usine ou l' équipement de construction indiqué cidessous:
por el presente certifico que la fabrica o el equipo especificado a continuacion:
certifico che l'impianto o l'attrezzatura sotto specificata:

1. Category: Submersible Pump
   Kategorie:
   Catégorie:
   Categoria:
   Categoria:
2. Make/Ausführung/Marque/Marca/Marca Stanley
3. Type/Typ/Type/Tipo/Tipo: SM50100
4. Serial number of equipment:
   Seriennummer des Geräts:
   Numéro de série de l'équipement:
   Numero de serie del equipo:
   Matricola dell´attrezzatura: **All**
5. Year of manufacture/Baujahr/année de fabrication/Año de fabricacion/Anno di fabbricazione 2002

Has been manufactured in conformity with - EEC Type examination as shown.
Wurde hergestellt in Übereinstimmung mit - EEC Typ-Prüfung nach.
Est fabriqué conformément - au(x) type(s) examiné(s) comme indiqué dans le tableau ci-après.
Ha sido fabricado de acuerdo con - tipo examen EEC como dice.
E' stata costruita in conformitá con - le norme CEE come illustrato.

	Examen CEE de type			
Directive Richtlinie Directives particulières Directriz Direttiva	No. Nr Numéro No n.	Date Datum Date Fecha Data	Approved body Prüfung durch Organisme agréé Aprobado Collaudato	Date of expiry Ablaufdatum Date d´expiration Fecha de caducidad Data di scadenza
EN Machinery Directive	809 98/37/EC	1995 1998	Self Self	NA NA

6. Special Provisions: None
   Spezielle Bestimmungen:
   Dispositions particulières:
   Provisiones especiales:
   Disposizioni speciali:

Done at/Ort/Fait à/Dado en/Fatto a Stanley Hydraulic Tools, Milwaukie, Oregon USA Date/Datum/le/Fecha/Data 2002

Signature/Unterschrift/Signature/Firma/Firma _____

Position/Position/Fonction/Puesto/Posizione Engineering Manager

SAFETY SYMBOLS

Safety symbols and signal words, as shown below, are used to emphasize all operator, maintenance and repair actions which, if not strictly followed, could result in a life-threatening situation, bodily injury or damage to equipment.

This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

⚠ DANGER — **This safety alert and signal word indicate an imminently hazardous situation which, if not avoided, will result in death or serious injury.**

⚠ WARNING — **This safety alert and signal word indicate a potentially hazardous situation which, if not avoided, could result in death or serious injury.**

⚠ CAUTION — **This safety alert and signal word indicate a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.**

CAUTION — **This signal word indicates a potentially hazardous situation which, if not avoided, may result in property damage.**

NOTICE — **This signal word indicates a situation which, if not avoided, will result in damage to the equipment.**

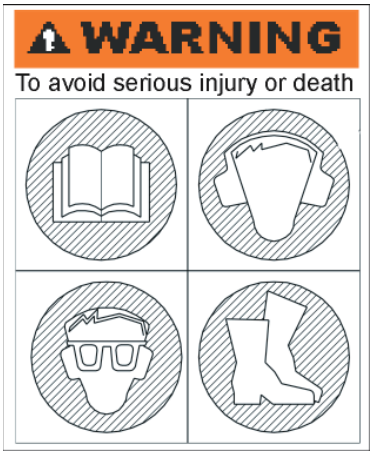
IMPORTANT — **This signal word indicates a situation which, if not avoided, may result in damage to the equipment.**

Always observe safety symbols. They are included for your safety and for the protection of the tool.

LOCAL SAFETY REGULATIONS

Enter any local safety regulations here. Keep these instructions in an area accessible to the operator and maintenance personnel.

SAFETY PRECAUTIONS



Tool operators and maintenance personnel must always comply with the safety precautions given in this manual and on the stickers and tags attached to the tool and hose.

These safety precautions are given for your safety. Review them carefully before operating the tool and before performing general maintenance or repairs.

Supervising personnel should develop additional precautions relating to the specific work area and local safety regulations. If so, place the added precautions in the space provided in this manual.

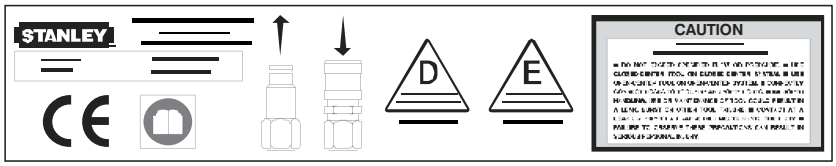
The models SM50 Hydraulic Pump will provide safe and dependable service if operated in accordance with the instructions given in this manual. Read and understand this manual and any stickers and tags attached to the pump and hoses before operation. Failure to do so could result in personal injury or equipment damage.

- Operator must start in a work area without bystanders. The operator must be familiar with all prohibited work areas such as excessive slopes and dangerous terrain conditions.
- Establish a training program for all operators to ensure safe operations.
- Do not operate the tool unless thoroughly trained or under the supervision of an instructor.
- Always wear safety equipment such as goggles, head protection, and safety shoes at all times when operating the tool.
- Do not inspect or clean the tool while the hydraulic power source is connected. Accidental engagement of the tool can cause serious injury.
- Do not operate this tool without first reading the Operating Instructions.
- Do not install or remove this tool while the hydraulic power source is connected. Accidental engagement of the tool can cause serious injury.
- Never operate the tool near energized transmission lines. know the location of buried or covered services before starting work.
- Do not wear loose fitting clothing when operating the tool. Loose fitting clothing can get entangled with the tool and cause serious injury.
- Supply hoses must have a minimum working pressure rating of 2500 psi/175 bar.
- Be sure all hose connections are tight.
- The hydraulic circuit control valve must be in the “OFF” position when coupling or uncoupling the tool. Wipe all couplers clean before connecting. Failure to do so may result in damage to the quick couplers and cause overheating. Use only lint-free cloths.
- Do not operate the tool at oil temperatures above 140° F/60° C. Operation at higher oil temperatures can cause operator discomfort and may cause damage to the tool.
- Do not operate a damaged, improperly adjusted, or incompletely assembled tool.

SAFETY PRECAUTIONS

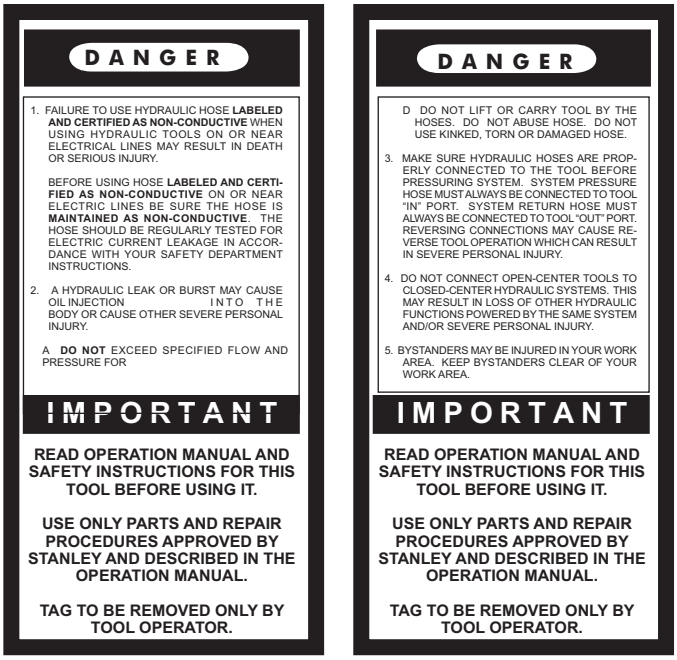
- To avoid personal injury or equipment damage, all tool repair, maintenance and service must only be performed by authorized and properly trained personnel.
- Do not exceed the rated limits of the tool or use the tool for applications beyond its design capacity.
- Always keep critical tool markings, such as labels and warning stickers legible.
- Always replace parts with replacement parts recommended by Stanley Hydraulic Tools.
- Check fastener tightness often and before each use daily.

TOOL STICKERS & TAGS



52728
SM50 Combined Decal

The safety tag (p/n 15875) at right is attached to the tool when shipped from the factory. Read and understand the safety instructions listed on this tag before removal. We suggest you retain this tag and attach it to the tool when not in use.


DANGER
1. FAILURE TO USE HYDRAULIC HOSE LABELED AND CERTIFIED AS NON-CONDUCTIVE WHEN USING HYDRAULIC TOOLS ON OR NEAR ELECTRICAL LINES MAY RESULT IN DEATH OR SERIOUS INJURY.
BEFORE USING HOSE LABELED AND CERTIFIED AS NON-CONDUCTIVE ON OR NEAR ELECTRIC LINES BE SURE THE HOSE IS MAINTAINED AS NON-CONDUCTIVE. THE HOSE SHOULD BE REGULARLY TESTED FOR ELECTRIC CURRENT LEAKAGE IN ACCORDANCE WITH YOUR SAFETY DEPARTMENT INSTRUCTIONS.
2. A HYDRAULIC LEAK OR BURST MAY CAUSE OIL INJECTION INTO THE BODY OR CAUSE OTHER SEVERE PERSONAL INJURY.
A DO NOT EXCEED SPECIFIED FLOW AND PRESSURE FOR
IMPORTANT
READ OPERATION MANUAL AND SAFETY INSTRUCTIONS FOR THIS TOOL BEFORE USING IT.
USE ONLY PARTS AND REPAIR PROCEDURES APPROVED BY STANLEY AND DESCRIBED IN THE OPERATION MANUAL.
TAG TO BE REMOVED ONLY BY TOOL OPERATOR.
DANGER
D DO NOT LIFT OR CARRY TOOL BY THE HOSES. DO NOT ABUSE HOSE. DO NOT USE KINKED, TORN OR DAMAGED HOSE.
3. MAKE SURE HYDRAULIC HOSES ARE PROPERLY CONNECTED TO THE TOOL BEFORE PRESSURING SYSTEM. SYSTEM PRESSURE HOSE MUST ALWAYS BE CONNECTED TO TOOL "IN" PORT. SYSTEM RETURN HOSE MUST ALWAYS BE CONNECTED TO TOOL "OUT" PORT. REVERSING CONNECTIONS MAY CAUSE REVERSE TOOL OPERATION WHICH CAN RESULT IN SEVERE PERSONAL INJURY.
4. DO NOT CONNECT OPEN-CENTER TOOLS TO CLOSED-CENTER HYDRAULIC SYSTEMS. THIS MAY RESULT IN LOSS OF OTHER HYDRAULIC FUNCTIONS POWERED BY THE SAME SYSTEM AND/OR SEVERE PERSONAL INJURY.
5. BYSTANDERS MAY BE INJURED IN YOUR WORK AREA. KEEP BYSTANDERS CLEAR OF YOUR WORK AREA.
IMPORTANT
READ OPERATION MANUAL AND SAFETY INSTRUCTIONS FOR THIS TOOL BEFORE USING IT.
USE ONLY PARTS AND REPAIR PROCEDURES APPROVED BY STANLEY AND DESCRIBED IN THE OPERATION MANUAL.
TAG TO BE REMOVED ONLY BY TOOL OPERATOR.

SAFETY TAG P/N 15875 (shown smaller then actual size)

HYDRAULIC HOSE REQUIREMENTS

HOSE TYPES

Hydraulic hose types authorized for use with Stanley Hydraulic Tools are as follows:

❶ Certified non-conductive

❷ Wire-braided (conductive)

❸ Fabric-braided (not certified or labeled non-conductive)

Hose ❶ listed above is the only hose authorized for use near electrical conductors.

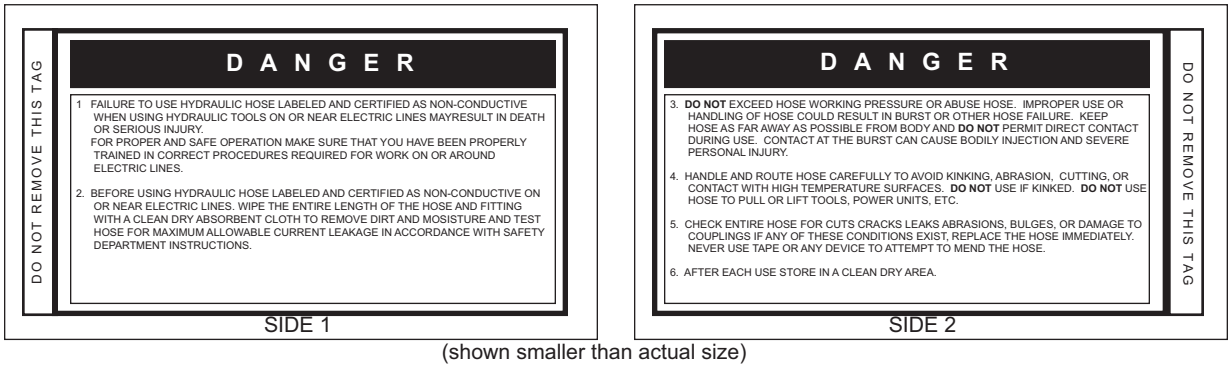
Hoses ❷ and ❸ listed above are **conductive** and **must never** be used near electrical conductors.

HOSE SAFETY TAGS

To help ensure your safety, the following DANGER tags are attached to all hose purchased from Stanley Hydraulic Tools. DO NOT REMOVE THESE TAGS.

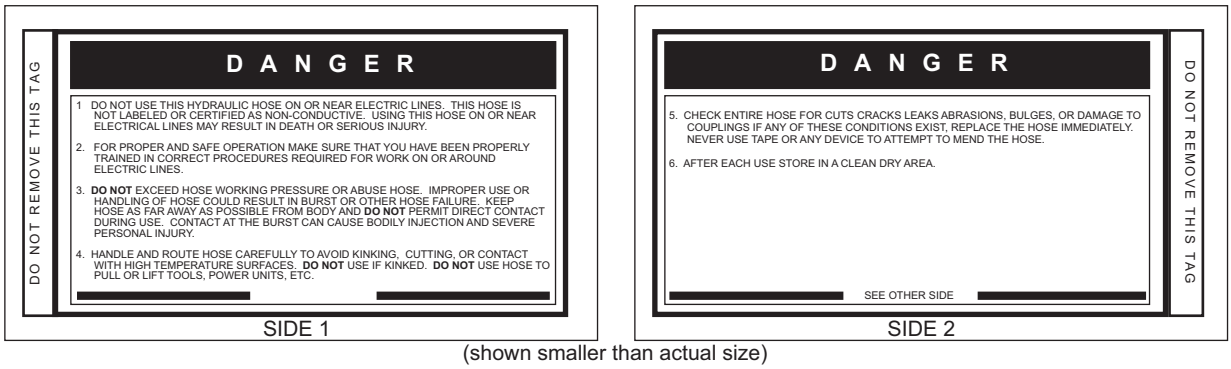
If the information on a tag is illegible because of wear or damage, replace the tag immediately. A new tag may be obtained from your Stanley Distributor.

THE TAG SHOWN BELOW IS ATTACHED TO "CERTIFIED NON-CONDUCTIVE" HOSE


DO NOT REMOVE THIS TAG
D A N G E R
1 FAILURE TO USE HYDRAULIC HOSE LABELED AND CERTIFIED AS NON-CONDUCTIVE WHEN USING HYDRAULIC TOOLS ON OR NEAR ELECTRIC LINES MAYRESULT IN DEATH OR SERIOUS INJURY.
FOR PROPER AND SAFE OPERATION MAKE SURE THAT YOU HAVE BEEN PROPERLY TRAINED IN CORRECT PROCEDURES REQUIRED FOR WORK ON OR AROUND ELECTRIC LINES.
2. BEFORE USING HYDRAULIC HOSE LABELED AND CERTIFIED AS NON-CONDUCTIVE ON OR NEAR ELECTRIC LINES. WIPE THE ENTIRE LENGTH OF THE HOSE AND FITTING WITH A CLEAN DRY ABSORBENT CLOTH TO REMOVE DIRT AND MOISTURE AND TEST HOSE FOR MAXIMUM ALLOWABLE CURRENT LEAKAGE IN ACCORDANCE WITH SAFETY DEPARTMENT INSTRUCTIONS.
SIDE 1
D A N G E R
3. DO NOT EXCEED HOSE WORKING PRESSURE OR ABUSE HOSE. IMPROPER USE OR HANDLING OF HOSE COULD RESULT IN BURST OR OTHER HOSE FAILURE. KEEP HOSE AS FAR AWAY AS POSSIBLE FROM BODY AND DO NOT PERMIT DIRECT CONTACT DURING USE. CONTACT AT THE BURST CAN CAUSE BODILY INJECTION AND SEVERE PERSONAL INJURY.
4. HANDLE AND ROUTE HOSE CAREFULLY TO AVOID KINKING, ABRASION, CUTTING, OR CONTACT WITH HIGH TEMPERATURE SURFACES. DO NOT USE IF KINKED. DO NOT USE HOSE TO PULL OR LIFT TOOLS, POWER UNITS, ETC.
5. CHECK ENTIRE HOSE FOR CUTS CRACKS LEAKS ABRASIONS, BULGES, OR DAMAGE TO COUPLINGS IF ANY OF THESE CONDITIONS EXIST, REPLACE THE HOSE IMMEDIATELY. NEVER USE TAPE OR ANY DEVICE TO ATTEMPT TO MEND THE HOSE.
6. AFTER EACH USE STORE IN A CLEAN DRY AREA.
DO NOT REMOVE THIS TAG
SIDE 2

(shown smaller than actual size)

THE TAG SHOWN BELOW IS ATTACHED TO "CONDUCTIVE" HOSE.


DO NOT REMOVE THIS TAG
D A N G E R
1 DO NOT USE THIS HYDRAULIC HOSE ON OR NEAR ELECTRIC LINES. THIS HOSE IS NOT LABELED OR CERTIFIED AS NON-CONDUCTIVE. USING THIS HOSE ON OR NEAR ELECTRICAL LINES MAY RESULT IN DEATH OR SERIOUS INJURY.
2. FOR PROPER AND SAFE OPERATION MAKE SURE THAT YOU HAVE BEEN PROPERLY TRAINED IN CORRECT PROCEDURES REQUIRED FOR WORK ON OR AROUND ELECTRIC LINES.
3. DO NOT EXCEED HOSE WORKING PRESSURE OR ABUSE HOSE. IMPROPER USE OR HANDLING OF HOSE COULD RESULT IN BURST OR OTHER HOSE FAILURE. KEEP HOSE AS FAR AWAY AS POSSIBLE FROM BODY AND DO NOT PERMIT DIRECT CONTACT DURING USE. CONTACT AT THE BURST CAN CAUSE BODILY INJECTION AND SEVERE PERSONAL INJURY.
4. HANDLE AND ROUTE HOSE CAREFULLY TO AVOID KINKING, CUTTING, OR CONTACT WITH HIGH TEMPERATURE SURFACES. DO NOT USE IF KINKED. DO NOT USE HOSE TO PULL OR LIFT TOOLS, POWER UNITS, ETC.
SIDE 1
D A N G E R
5. CHECK ENTIRE HOSE FOR CUTS CRACKS LEAKS ABRASIONS, BULGES, OR DAMAGE TO COUPLINGS IF ANY OF THESE CONDITIONS EXIST, REPLACE THE HOSE IMMEDIATELY. NEVER USE TAPE OR ANY DEVICE TO ATTEMPT TO MEND THE HOSE.
6. AFTER EACH USE STORE IN A CLEAN DRY AREA.
SEE OTHER SIDE
DO NOT REMOVE THIS TAG
SIDE 2

(shown smaller than actual size)

HOSE PRESSURE RATING

The rated working pressure of the hydraulic hose **must be equal to or higher than** the relief valve setting on the hydraulic system.

HTMA REQUIREMENTS

HYDRAULIC SYSTEM REQUIREMENTS	TOOL CATEGORY TYPE 1	 TYPE II	TYPE III	TYPE RR
FLOW RATE	4-6 gpm (15-23 lpm)	7-9 gpm (26-34 lpm)	11-13 gpm (42-49 lpm)	9-10.5 gpm (34-40 lpm)
TOOL OPERATING PRESSURE (at the power supply outlet)	2000 psi (138 bar)	2000 psi (138 bar)	2000 psi (138 bar)	2000 psi (138 bar)
SYSTEM RELIEF VALVE SETTING (at the power supply outlet)	2100-2250 psi (145-155 bar)	2100-2250 psi (145-155 bar)	2100-2250 psi (145-155 bar)	2200-2300 psi (152-159 bar)
MAXIMUM BACK PRESSURE (at tool end of the return hose)	250 psi (17 bar)	250 psi (17 bar)	250 psi (17 bar)	250 psi (17 bar)
Measured at a max. fluid viscosity of: (at min. operating temperature)	400 ssu* (82 centistokes)	400 ssu* (82 centistokes)	400 ssu* (82 centistokes)	400 ssu* (82 centistokes)
TEMPERATURE Sufficient heat rejection capacity to limit max. fluid temperature to: (at max. expected ambient temperature)	140° F (60° C)	140° F (60° C)	140° F (60° C)	140° F (60° C)
Min. cooling capacity at a temperature difference of between ambient and fluid temps	3 hp (2.24 kW) 40° F (22° C)	5 hp (3.73 kW) 40° F (22° C)	7 hp (4.47 kW) 40° F (22° C)	6 hp (5.22 kW) 40° F (22° C)
NOTE: Do not operate the tool at oil temperatures above 140° F (60° C). Operation at higher temperatures can cause operator discomfort at the tool.				
FILTER Min. full-flow filtration Sized for flow of at least: (For cold temp. startup and max. dirt-holding capacity)	25 microns 30 gpm (114 lpm)	25 microns 30 gpm (114 lpm)	25 microns 30 gpm (114 lpm)	25 microns 30 gpm (114 lpm)
HYDRAULIC FLUID Petroleum based (premium grade, anti-wear, non-conductive) VISCOSITY (at min. and max. operating temps)	100-400 ssu*	100-400 ssu*	100-400 ssu* (20-82 centistokes)	100-400 ssu*
NOTE: When choosing hydraulic fluid, the expected oil temperature extremes that will be experienced in service determine the most suitable temperature viscosity characteristics. Hydraulic fluids with a viscosity index over 140 will meet the requirements over a wide range of operating temperatures.				

*SSU = Saybolt Seconds Universal

NOTE:
These are general hydraulic system requirements. See tool Specification page for tool specific requirements.

OPERATION

PREOPERATION PROCEDURES

CHECK POWER SOURCE

1. Using a calibrated flow meter and pressure gauge, make sure the hydraulic power source develops a flow of 7-12 gpm/26-45 lpm at 1000-2000 psi/70-140 bar.

2. Make certain that the power source is equipped with a relief valve set to open at 2100 psi/145 bar maximum.

3. Make certain that the power source return pressure does not exceed 250 psi/17 bar.

4. Make sure the trash pump inlet is clear of debris. Remove any obstruction before operating. Refer to PUMP CLEANING PROCEDURES.

CONNECT HOSES

1. Wipe all hose couplers with a clean lint free cloth before making connections.

2. Connect the hoses from the hydraulic power source to the couplers on the trash pump or trash pump hoses. It is a good practice to connect return hose first and disconnect it last to minimize or avoid trapped pressure within the trash pump motor.

Note:
If uncoupled hoses are left in the sun, pressure increase inside the hoses might make them difficult to connect. Whenever possible, connectthe free ends of the hoses together.

3. Observe the arrow on the couplers to ensure that the flow is in the proper direction. The female coupler on the trash pump is the inlet (pressure) coupler.

PUMP OPERATION

1. Observe all safety precautions.

Note:
The SM50 is not desgined for use with a suction pipe inlet. The diameter of the suction screen at the bottom of the pump provides madimum pump efficiency. Reducing the size of this inlet will greatly reduce pump performance.

2. Connect a hose fitted with a 3 inch/76.2 mm female camlock coupler to the pump outlet fitting. Make sure the fitting is securely tightened. For best performance, keep the hose as short as possible and lay it out to avoid sharp bends or kinks.

3. Lower the pump into the liquid to be pumped. Locate the outlet end of the discharge hose to disperse the liquid as required. Remove any kinks from thehose to assure maximum water flow.

IMPORTANT

Never point the hose at bystanders.

4. Turn on the hydraulic power source. Watch for solids in the liquid being pumped. If solids are excessive, the discharge flow might decrease. If this happens, stop the pump and check for the cause of the problem.

Under some conditions, the liquid being pumped might be slowed enough so It can no longer push particles in the liquid. If this happens, particles can accumulate in the hose and backup the pumping chamber, causing further restriction. The impeller then acts as a “grinding wheel which causes accelerated pump wear. Reduced liquid flow can be caused by the following:

• The pump sinks into solids at the bottom of the hole.

• The end of the outlet hose is too high, causing an excessive lift height for the column of liquid being pushed by the trash pump. This slows the flow of liquid to a level where it can no longer carry solids out the end of the hose.

• The flow and pressure of hydraulic fluid to the pump is too low, which reduces impeller speed. A 20% decrease in hydraulic fluid flow can reduce pump performance by 50%. When operating at reduced hydraulic flow and pressure, the end of the outlet hose should not be more than 30 ft/9 m above the liquid.

5. When pumping is complete, set the hydraulic control valve to the “OFF” position. Lift the pump from the work area.

COLD WEATHER OPERATION

If the trash pump is to be used during cold weather, preheat the hydraulic fluid at low power source speed. When using the normally recommended fluids, fluid should be at or above 50°FI1 DoC (400 ssu/82 centistokes) before use. Damage to the hydraulic system or pump motor seals can result from use with fluid that is too viscous or thick.

MAINTENANCE

CLEANING THE PUMPING CHAMBER

Debris such as weeds, sand and other solids may become trapped in the water hose and pumping chamber. This can reduce pump performance. It is important that the pumping chamber be kept clean at all times. The chamber can be cleaned as follows:

1. Remove motor and impeller by removing the two M12 x 1.75 Hex Head capscrews.

2. Remove all debris from the pump screen.

3. Thoroughly clean the volute and impeller. Do not remove the impeller unless necessary for repair or replacement or to remove trapped debris.

4. Assemble the motor and impeller to the volute. Clean the capscrews and lubricate the threads with underwater grease before installation.

5. Remove all debris from the hose. Otherwise, solids will backfill the pump.

EQUIPMENT PROTECTION & CARE

NOTICE

In addition to the Safety Precautions in this manual, observe the following for equipment protection and care.

- Make sure all couplers are wiped clean before connection.
- The hydraulic circuit control valve must be in the “OFF” position when coupling or uncoupling hydraulic tools. Failure to do so may result in damage to the quick couples and cause overheating of the hydraulic system.
- Always store the tool in a clean dry space, safe from damage or pilferage.
- Make sure the circuit PRESSURE hose (with male quick disconnect) is connected to the “IN” port. The circuit RETURN hose (with female quick disconnect) is connected to the opposite port. Do not reverse circuit flow. This can cause damage to internal seals.
- Always replace hoses, couplings and other parts with replacement parts recommended by Stanley Hydraulic Tools. Supply hoses must have a minimum working pressure rating of 2500 psi/172 bar.
- Do not exceed the rated flow (see Specifications) in this manual for correct flow rate and model number. Rapid failure of the internal seals may result.
- Always keep critical tool markings, such as warning stickers and tags legible.
- Do not use the tool for applications it was not designed for.
- Tool repair should be performed by experienced personnel only.
- Make certain that the recommended relief valves are installed in the pressure side of the system.
- Do not use the tool for applications for which it was not intended.

TROUBLESHOOTING

If symptoms of poor performance develop, the following chart can be used as a guide to correct the problem.

When diagnosing faults in operation, always make sure the hydraulic power source is supplying the correct hydraulic flow and pressure as listed in the table. Use a flowmeter know to be accurate. Check the flow with the hydraulic fluid temperature at least 80° F/27° C.

PROBLEM	CAUSE	SOLUTION
Pump will not start.	No hydraulic fluid flow or pressure.	Turn on power unit and check that 7-12 gpm/26-45 lpm at 1000-2000 psi/70-140 bar is available at the pump.
	Defective couplers.	Check the couplers. Replace if necessary.
	Impeller jammed with debris.	Clean the pumping chamber as described in the Maintenance section in this manual.
	Impeller rubbing against wear plates.	Check and adjust the impeller clearance as described in the Service Instructions section in this manual.
	Defective hydraulic motor.	Repair or replace motor.
Poor pump performance.	Hydraulic flow reversed.	Check that the hoses are correctly connected to the pump motor ports. The female coupler should be connected to the “IN” port. The return fluid must never flow through a reversing valve.
	Improper hydraulic fluid flow.	Check that 7-12 gpm/26-45 lpm at 1000-2000 psi/70-140 bar is available at the trash pump. A 20% decrease in flow can result in a 50% decrease in pump performance.
	Pump submersed in sediment.	Lift the pump from the bottom of the hole or chamber. Use a flat support under the pump if necessary.
	Trash pump inlet restricted.	Remove suction screen and thoroughly clean. Reassemble.
	Discharge hose kinked or restricted.	Straighten the hose. If the hose must bend at the top of the hole, use a piece of split rigid conduit with large diameter of the expanded hose. This keeps the hose from kinking.
	Discharge hose too small.	Use a 3-inch diameter fire hose.
	Water lift too high.	Lower the outlet end of the discharge hose. Increase hydraulic flow (12 gpm/45 lpm max).
	Impeller worn or damaged.	Check impeller for damage and excessive wear. Replace if necessary.
	Pump not matched to application	Obtain higher capacity pump.
	Hose used on suction side of pump.	Remove. Use no plumbing on suction side of pump.
Poor pump performance with excessive wear.	Too many solids in the water. Water speed out of the hose may be too slow, thereofre hose and pump load up with solids.	Reduce solids content. Increase pump speed.

SPECIFICATIONS

Capacity	500 gpm/1890 lpm
Weight	21 lbs/9.5 kg
Length	10.5 in./26.7 cm
Width	10 in./25.4 cm
Pressure	1000-2000 psi/70-140 bar
Flow Range	7-12 gpm/26-45 lpm
Maximum Flow	12 gpm/45 lpm
Porting	-8SAE O-Ring
Connect Size and Type	3/8 in. Flush Face Quick Disconnect Couplers
Discharge Diameter	3 in./7.6 cm
Sound Pressure	<85 dBA @ 1 m

ACCESSORIES

Description	Part No.
Adapter, 3 in. NPT/3 in. Camlock Male	52720
Lay-Flat Discharge Hose, 3 in. x 25 ft with Camlock Fittings	56761
Adapter, 3 in. Femaile Camlock x Male Fire Hose (nh) Thread	15248

SERVICE

TOOL DISASSEMBLY / REASSEMBLY

Note: For orientation of parts in the following procedures, refer to the parts drawing later in this manual.

PRIOR TO DISASSEMBLY

1. Clean the exterior of the tool and place on a clean work surface.

2. Obtain the seal kit listed on the PARTS LIST so all seals exposed during disassembly can be replaced.

PRIOR TO REASSEMBLY

1. Clean all parts with a degreasing solution

2. Blow dry all parts or use lint-free cloths.

3. Ensure that all seals exposed during disassembly are replaced with new parts.

4. Apply clean grease or o-ring lubricant to all parts during assembly.

TOOL DISASSEMBLY

VOLUTE

1. Remove the volute (1) by first removing the hex head cap screws (25) and pulling the motor and impeller off the volute.

IMPELLER

1. Remove hex socket head capscrew (3) and washer (4) before lifting impeller (5) off motor assembly.

2. Remove key (18) and shim stack (7 & 8) from impeller.

MOTOR CAP

1. Remove the hex socket head capscrews (33) that secure the motor cap (31) to the front bearing housing (24) and remove the motor cap. Do not in any way excessively force the motor cap off the front bearing housing.

2. Remove the o-ring (26) from the motor cap.

DRIVE SHAFT

1. Remove idler gear (29), idler shaft (30), drive gear (28), and needle roller (19) from front bearing housing.

2. Remove the v-ring (6) from the seal race (14) before pulling the seal race off the drive shaft.

3. Remove retaining ring (9).

4. Using a pick, remove the seal carrier (10), cup seal (12), o-ring (11), seal retainer (13), and o-ring (15) from the bearing cavity.

5. Press the drive shaft (17) and bearings (16) from the front bearing housing.

6. Spin the ball bearings on the drive shaft. The bearing should turn smoothly. To replace the bearing, support the outer race and press down on the drive shaft from the threaded end. Do not reuse the ball bearing once it has been removed from the drive shaft.

DRIVE SHAFT SEAL

1. Remove the retaining ring (20), quad ring (21), seal gland (22) and o-ring (23) from the drive shaft bore using a pick.

CLEANING AND INSPECTION

CLEANING

Clean all parts with a degreasing solution. Blow dry with compressed air or use lint-free cloths.
Gear Chamber (Motor Cap)

The chamber bores and bottoms around the shaft bushings should be polished and not rough or grooved. If the bushing bores are yellow-bronze, replace them and investigate the cause of wear.

The flat surfaces around the chamber and bolt holes should be flat and free of nicks or burrs that could cause misalignment or leaks.

BUSHINGS

The inside of the bushings should be gray with some bronze showing through. If significant yellow-bronze shows, replace the bushings. Inspect the motor shaft and idler shaft for corresponding wear and replace as required.

GEARS

The drive and idler gears should have straight tips without nicks, square tooth ends, and a smooth even polish on the teeth and end faces. Replace the gear if cracks are present.

FRONT BEARING HOUSING

The surface near the gears should show two interconnecting polished circles without a step.

SHAFTS

The shaft diameter at the bearing and seal locations must be smooth. Grooves, roughness or a reduced diameter indicate fluid contamination or damaged bushings. Grit particles may have been imbedded in the bushings, grinding into the hardened shaft. If abnormal shaft wear as noted above occurs (more than normal polishing), replace both the shaft and associated bushings.

Also check the hydraulic system for excess contamination in the fluid and for filter condition. Operating conditions may require changing from a 25-micron filter to an oversized 10-micron filter.

TOOL REASSEMBLY

DRIVE SHAFT SEAL

1. Heavily lubricate and install a new o-ring (23) and quad ring (21) into seal gland (22). Ensure the quad ring is not twisted during assembly.

2. Install seal gland and attached parts into front bearing housing and secure with retaining ring (20).

DRIVE SHAFT

1 Install bearings (16) onto lubricated drive shaft (17) by supporting the inner races of the bearings and pressing drive shaft through bearings until the bearings rest against the shoulder. Installation by the outer race will cause bearing damage.

2. Pack grease into needle roller groove on drive shaft and insert drive shaft into the seal gland. Using a bearing pusher or a sleeve / socket with a diameter slightly smaller than the bearing bore, press the bearing assembly into place using the outer race. Installation by the inner race will result in bearing damage.

3. Lubricate and install o-ring (15) and seal race (14) onto driveshaft.

4. Lubricate and install seal retainer (13) and o-ring (11) into bearing bore.

5. Heavily lubricate with underwater grease and install cup seal (12) and seal carrier (10) into bearing bore and secure with retaining ring (9). Installation of seal carrier and cup seal before seal race has been installed will result in damage to cup seal.

6. Lubricate with underwater grease and install v-ring (6) onto seal race.

7. Install idler shaft (30) and idler gear (29).

8. Use grease to hold needle roller (19) in place before installing drive gear (28).

MOTOR CAP

1. Lubricate and install o-ring (26) into motor cap (31).

2. Lubricate hex socket head capscrews (33) with an antiseize compound and install motor cap to front bearing housing. Tighten capscrews to 8-10 ft.lb. Note the orientation of the motor cap as the bolt holes will only line up one way.

⚠ CAUTION

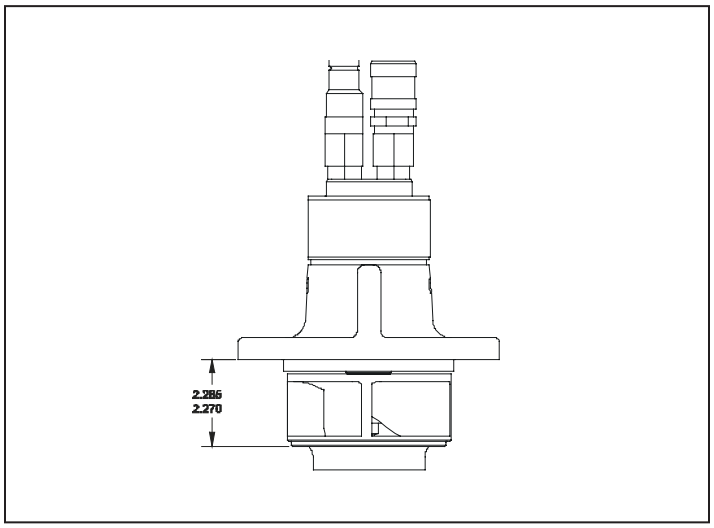
Do not force parts together.

IMPELLER

1. Install shim stack (7&8) onto drive shaft.

2. Install key (18) and impeller (5) to drive shaft and, using loctite, secure with washer (4) and hex socket head capscrew (3). Tighten capscrew to 15 ft.lb.

3. Using a depth mic, measure the distance from the bottom of the motor flange to the bottom of the stepped diameter as shown below. Adjust shim stack accordingly to achieve a 2.285 / 2.270 offset.

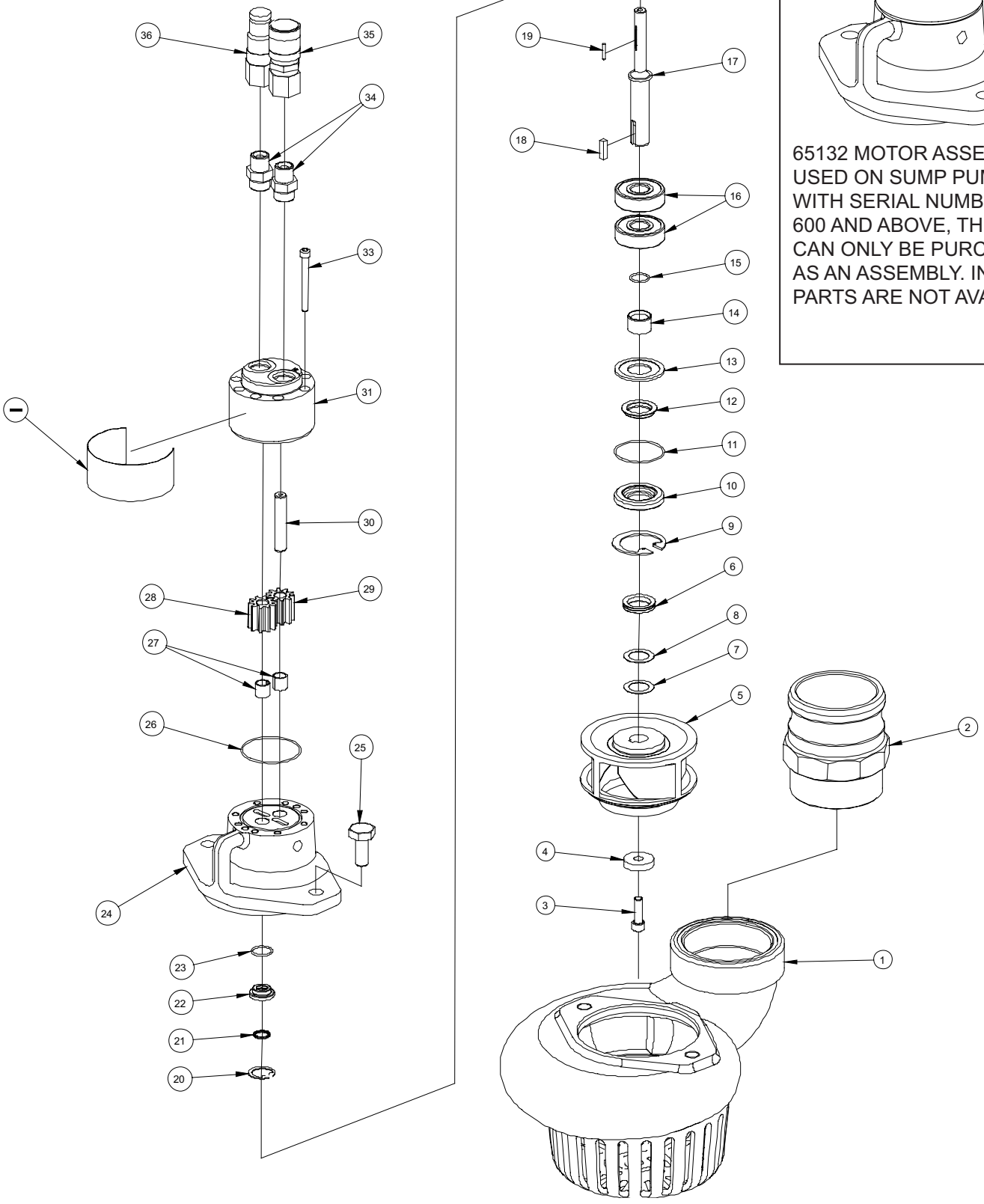


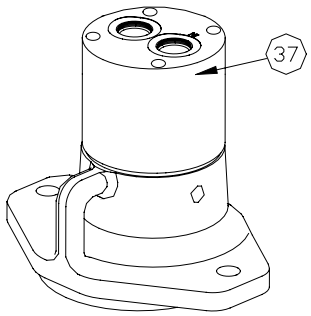
VOLUTE

1. Assemble motor and impeller to volute (1) and secure with hex head cap screws (25).

2. Use an allen wrench to ensure that the impeller with free-wheel after assembly.

PARTS ILLUSTRATION





65132 MOTOR ASSEMBLY USED ON SUMP PUMPS WITH SERIAL NUMBERS 600 AND ABOVE, THIS MOTOR CAN ONLY BE PURCHASED AS AN ASSEMBLY. INDIVIDUAL PARTS ARE NOT AVAILABLE.

PARTS LIST

Item No.	Part No.	Qty	Description
1	52669	1	Volute
2	52720	1	Camlock Coupling 3 in.
3	13815	1	HSHCS 5/16 - 18 x 3/4
4	56763	1	Washer
5	52671	1	Impeller
6	52716	1	V-Ring
7	31032	*	Shim .020
8	31033	*	Shim .010
9	00166	1	Retaining Ring
10	52719	1	Seal Carrier
11	01262	1	O-ring 1-3/4 x 1-7/8 x 1/16 -031
12	58651	1	Cup Seal
13	56658	1	Seal Retainer
14	56697	1	Seal Race
15	01211	1	O-ring 5/8 x 3/4 x 1/16 -016
16	00148	2	Bearing
17	52696	1	Drive Shaft
18	00635	1	Key
19	06881	1	Needle Roller
20	00170	1	Retaining Ring
21	00669	1	Quad Ring 1/2 x 5/8 x 1/16 - 014
22	19884	1	Seal Gland
23	00171	1	O-Ring 11/16 x 13/16 x 1/16 - 017
24	52693	1	Front Bearing Housing
25	52718	2	HHCS M12-1.75 x 30mm
26	00178	1	O-ring 2-1/8 x 2-1/4 x 1/16 - 034
27	06316	2	Bushing
28	06853	1	Drive Gear
29	06855	1	Idler Gear
30	06854	1	Idler Shaft
31	06857	1	Gear Housing
32	52728	1	Name Tag and Safety Sticker
33	00612	8	HSHCS 1/4-20 x 2-1/4
34	00936	2	Adapter
35	58856	1	Female Flush Face Coupler Body 3/8 NPT
36	58857	1	Male Flush Face Coupler Nose 3/8 NPT
	58718	1	Coupler Set
	52758	**1**	**REPAIR KIT**
	52759	**1**	**SEALKIT**

*NOTE: Items 9 through 24 and 26 through 31 and Item 33 Are Used On Sump Pumps With Serial Numbers 599 And Below.

All Pumps With A Serial Number of 600 And Above, Come Shipped With P/N-65132 Motor Assembly Installed. A Separate Seal Kit 66398 Is Available For This Motor.

Pumps With S/N-599 And Below May Purchase Individual Parts As Shown Above Or Purchase A Complete 65132 Motor Assy

WARRANTY

Stanley Hydraulic Tools (hereinafter called “Stanley”), subject to the exceptions contained below, warrants new hydraulic tools for a period of one year from the date of sale to the first retail purchaser, or for a period of 2 years from the shipping date from Stanley, whichever period expires first, to be free of defects in material and/or workmanship at the time of delivery, and will, at its option, repair or replace any tool or part of a tool, or new part, which is found upon examination by a Stanley authorized service outlet or by Stanley’s factory in Milwaukie, Oregon to be DEFECTIVE IN MATERIAL AND/OR WORKMANSHIP.

EXCEPTIONS FROM WARRANTY

NEW PARTS: New parts which are obtained individually are warranted, subject to the exceptions herein, to be free of defects in material and/or workmanship at the time of delivery and for a period of 6 months after the date of first usage. Seals and diaphragms are warranted to be free of defects in material and/or workmanship at the time of delivery and for a period of 6 months after the date of first usage or 2 years after the date of delivery, whichever period expires first. Warranty for new parts is limited to replacement of defective parts only. Labor is not covered.

FREIGHT COSTS: Freight costs to return parts to Stanley, if requested by Stanley for the purpose of evaluating a warranty claim for warranty credit, are covered under this policy if the claimed part or parts are approved for warranty credit. Freight costs for any part or parts which are not approved for warranty credit will be the responsibility of the individual.

SEALS & DIAPHRAGMS: Seals and diaphragms installed in new tools are warranted to be free of defects in material and/or workmanship for a period of 6 months after the date of first usage, or for a period of 2 years from the shipping date from Stanley, whichever period expires first.

CUTTING ACCESSORIES: Cutting accessories such as breaker tool bits are warranted to be free of defects in material and or workmanship at the time of delivery only.

ITEMS PRODUCED BY OTHER MANUFACTURERS: Components which are not manufactured by Stanley and are warranted by their respective manufacturers.

a. Costs incurred to remove a Stanley manufactured component in order to service an item manufactured by other manufacturers.

ALTERATIONS & MODIFICATIONS: Alterations or modifications to any tool or part. All obligations under this warranty shall be terminated if the new tool or part is altered or modified in any way.

NORMAL WEAR: any failure or performance deficiency attributable to normal wear and tear such as tool bushings, retaining pins, wear plates, bumpers, retaining rings and plugs, rubber bushings, recoil springs, etc.

INCIDENTAL/CONSEQUENTIAL DAMAGES: To the fullest extent permitted by applicable law, in no event will STANLEY be liable for any incidental, consequential or special damages and/or expenses.

FREIGHT DAMAGE: Damage caused by improper storage or freight handling.

LOSS TIME: Loss of operating time to the user while the tool(s) is out of service.

IMPROPER OPERATION: Any failure or performance deficiency attributable to a failure to follow the guidelines and/or procedures as outlined in the tool’s operation and maintenance manual.

MAINTENANCE: Any failure or performance deficiency attributable to not maintaining the tool(s) in good operating condition as outlined in the Operation and Maintenance Manual.

HYDRAULIC PRESSURE & FLOW, HEAT, TYPE OF FLUID: Any failure or performance deficiency attributable to excess hydraulic pressure, excess hydraulic back-pressure, excess hydraulic flow, excessive heat, or incorrect hydraulic fluid.

REPAIRS OR ALTERATIONS: Any failure or performance deficiency attributable to repairs by anyone which in Stanley’s sole judgement caused or contributed to the failure or deficiency.

MIS-APPLICATION: Any failure or performance deficiency attributable to mis-application. “Mis-application” is defined as usage of products for which they were not originally intended or usage of products in such a matter which exposes them to abuse or accident, without first obtaining the written consent of Stanley. PERMISSION TO APPLY ANY PRODUCT FOR WHICH IT WAS NOT ORIGINALLY INTENDED CAN ONLY BE OBTAINED FROM STANLEY ENGINEERING.

WARRANTY REGISTRATION: STANLEY ASSUMES NO LIABILITY FOR WARRANTY CLAIMS SUBMITTED FOR WHICH NO TOOL REGISTRATION IS ON RECORD. In the event a warranty claim is submitted and no tool registration is on record, no warranty credit will be issued without first receiving documentation which proves the sale of the tool or the tools’ first date of usage. The term “DOCUMENTATION” as used in this paragraph is defined as a bill of sale, or letter of intent from the first retail customer. A WARRANTY REGISTRATION FORM THAT IS NOT ALSO ON RECORD WITH STANLEY WILL NOT BE ACCEPTED AS “DOCUMENTATION”.

NO ADDITIONAL WARRANTIES OR REPRESENTATIONS

This limited warranty and the obligation of Stanley thereunder is in lieu of all other warranties, expressed or implied including merchantability or fitness for a particular purpose except for that provided herein. There is no other warranty. This warranty gives the purchaser specific legal rights and other rights may be available which might vary depending upon applicable law.

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